

control is needed. The present invention can provide such control in one small touch pad location. As Electronic Home Systems become more common, denser and more powerful human interface is needed. The sensor technology of the present invention permits a very dense control panel. Hand-held TVNCR/Stereo controls could be ergonomically formed and allow for more powerful features if this sensor technology is used.

The sensor of the present invention can be conformed to any surface and can be made to detect multiple touching points, making possible a more powerful joystick. The unique pressure detection ability of the sensor technology of the present invention is also key to this application. Computer games, "remote" controls (hobby electronics, planes), and machine tool controls are a few examples of applications which would benefit from the sensor technology of the present invention.

Musical keyboards (synthesizers, electric pianos) require velocity sensitive keys which can be provided by the pressure sensing ability of this sensor. There are also pitch bending controls, and other slide switches that could be replaced with this technology. An even more unique application comprises a musical instrument that creates notes as a function of the position and pressure of the hands and fingers in a very articulate 3-d interface.

The sensor technology of the present invention can best detect any conducting material pressing against it. By adding a compressible insulating layer covered by a layer of conductive material on top of the sensor the sensor of the present invention may also indirectly detect pressure from any object being handled, regardless of its electrical conductivity.

Because of the amount of information available from this sensor it will serve very well as an input device to virtual reality machines. It is easy to envision a construction that allows position-monitoring in three dimensions and some degree of response (pressure) to actions.

While embodiments and applications of this invention have been shown and described, it would be apparent to those skilled in the art that many more modifications than mentioned above are possible without departing from the inventive concepts herein. The invention, therefore, is not to be restricted except in the spirit of the appended claims.

What is claimed is:

1. A conductive paintbrush stylus for use with a capacitive touch sensor pad comprising:
 - an electrically conductive handle;
 - a plurality of electrically conductive bristles affixed to said handle;
 - wherein the total resistance of said handle and said bristles is no more than the skin resistance of a human finger.

2. The conductive paintbrush stylus of claim 1 wherein said total resistance is less than about 10M ohms.

3. The conductive paintbrush stylus of claim 1 wherein said plurality of electrically conductive bristles are formed from carbon fibers.

4. The conductive paintbrush stylus of claim 1 wherein said plurality of electrically conductive bristles are formed from fine wire.

5. The conductive paintbrush stylus of claim 4 wherein said plurality of electrically conductive bristles are formed from phosphor bronze wire.

6. A conductive paintbrush stylus for use with a touch sensor pad having a characteristic capacitance, said paintbrush comprising:

an electrically conductive handle;

a plurality of electrically conductive bristles affixed to said handle;

wherein the time constant of an RC circuit comprising the total resistance of said handle and said bristles and said characteristic capacitance is less than a sampling period used to sense the presence of a conductive object on said touch sensor pad.

7. The conductive paintbrush stylus of claim 6 wherein said plurality of electrically conductive bristles are formed from carbon fibers.

8. The conductive paintbrush stylus of claim 6 wherein said plurality of electrically conductive bristles are formed from fine wire.

9. The conductive paintbrush stylus of claim 8 wherein said plurality of electrically conductive bristles are formed from phosphor bronze wire.

10. The conductive paintbrush stylus of claim 6 wherein said plurality of electrically conductive bristles are affixed to said handle with a conductive adhesive.

11. A conductive paintbrush stylus for use with a touch sensor pad having a characteristic capacitance, said paintbrush comprising:

a bundle of carbon fibers having a length extending substantially the length of said paintbrush stylus, a first portion of said length of said bundle impregnated with a thin insulating material to form a rigid handle, and a second portion of said length of said bundle remaining exposed to form conductive bristles;

wherein the time constant of an RC circuit comprising the total resistance of said handle and said bristles and said characteristic capacitance is less than a sampling period used to sense the presence of a conductive object on said touch sensor pad.

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